Complete Summary

GUIDELINE TITLE

Stable coronary artery disease.

BIBLIOGRAPHIC SOURCE(S)

Institute for Clinical Systems Improvement (ICSI). Stable coronary artery disease. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2003 Nov. 42 p. [75 references]

COMPLETE SUMMARY CONTENT

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SCOPE

DISEASE/CONDITION(S)

Stable coronary artery disease with or without angina

GUIDELINE CATEGORY

Evaluation
Management

CLINICAL SPECIALTY

Cardiology
Family Practice
Geriatrics
Internal Medicine

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Health Care Providers
Health Plans
Hospitals
Managed Care Organizations
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

- To improve selection and education of patients with stable coronary artery disease (CAD) on the use of aspirin and anti-anginal drugs
- To improve patient understanding of management of stable coronary artery disease
- To increase the percentage of patients with stable coronary artery disease who receive an intervention for modifiable risk factors

TARGET POPULATION

Adults aged 18 and over with coronary artery disease with or without angina. Examples include patients with prior myocardial infarctions, prior revascularization (i.e., percutaneous transluminal coronary angioplasty [PTCA], coronary artery bypass graft [CABG]), angiographically proven coronary atherosclerosis, or reliable noninvasive evidence of myocardial ischemia

Patients presenting with angina must meet the following criteria:

- Symptom complex has remained stable for at least 60 days
- No significant change in frequency, duration, precipitating causes, or ease of relief of angina for at least 60 days
- No evidence of recent myocardial damage

INTERVENTIONS AND PRACTICES CONSIDERED

Evaluation

1. History, physical examination
2. Initial laboratory studies (electrocardiogram, fasting lipid profile [total cholesterol, high-density lipoprotein (HDL)-cholesterol, low-density lipoprotein (LDL)-cholesterol, and triglycerides]. Further studies, based on history and physical, may include chest x-ray, measurement of hemoglobin, and tests for diabetes, thyroid function, and renal function
3. Exercise electrocardiography (Masters 2-step exercise test, graded exercise test, bicycle test, ergometry)
4. Non-invasive imaging study (myocardial perfusion scintigraphy, stress echocardiography)

Treatment

1. Pharmacologic therapy (aspirin, clopidogrel, ticlopidine, sublingual nitrates, beta-blockers, calcium channel blockers, combination therapy) and nutritional supplement therapy (homocysteine, folic acid, vitamins B6 and B12, omega-3 fatty acids)
2. Cardiology consult and/or referral for cardiac catheterization and revascularization procedures [percutaneous transluminal coronary angioplasty (PTCA), coronary artery bypass graft (CABG)]

MAJOR OUTCOMES CONSIDERED

- Pain control
- Morbidity and mortality associated with coronary artery disease
- Safety of pharmacologic agents

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Key conclusions (as determined by the work group) are supported by a conclusion grading worksheet that summarizes the important studies pertaining to the conclusion. Individual studies are classed according to the system presented below, and are designated as positive, negative, or neutral to reflect the study quality.

Conclusion Grades:

Grade I: The evidence consists of results from studies of strong design for answering the question addressed. The results are both clinically important and consistent with minor exceptions at most. The results are free of any significant doubts about generalizability, bias, and flaws in research design. Studies with negative results have sufficiently large samples to have adequate statistical power.

Grade II: The evidence consists of results from studies of strong design for answering the question addressed, but there is uncertainty attached to the conclusion because of inconsistencies among the results from the studies or because of minor doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from weaker designs for the question addressed, but the results have been confirmed in separate studies and are consistent with minor exceptions at most.

Grade III: The evidence consists of results from studies of strong design for answering the question addressed, but there is substantial uncertainty attached to the conclusion because of inconsistencies among the results of different studies or because of serious doubts about generalizability, bias, design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from a limited number of studies of weak design for answering the question addressed.

Grade Not Assignable: There is no evidence available that directly supports or refutes the conclusion.

Study Quality Designations

The quality of the primary research reports and systematic reviews are designated in the following ways on the conclusion grading worksheets:

Positive: indicates that the report or review has clearly addressed issues of inclusion/exclusion, bias, generalizability, and data collection and analysis.

Negative: indicates that these issues (inclusion/exclusion, bias, generalizability, and data collection and analysis) have not been adequately addressed.

Neutral: indicates that the report or review is neither exceptionally strong or exceptionally weak.

Not Applicable: indicates that the report is not a primary reference or a systematic review and therefore the quality has not been assessed.

Classes of Research Reports:

A. Primary Reports of New Data Collection:

Class A:

- Randomized, controlled trial

Class B:

- Cohort study

Class C:

- Non-randomized trial with concurrent or historical controls

- Case-control study
- Study of sensitivity and specificity of a diagnostic test
- Population-based descriptive study

Class D:

- Cross-sectional study
- Case series
- Case report

B. Reports that Synthesize or Reflect upon Collections of Primary Reports:

Class M:

- Meta-analysis
- Systematic review
- Decision analysis
- Cost-effectiveness analysis

Class R:

- Consensus statement
- Consensus report
- Narrative review

Class X:

- Medical opinion

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Clinical Validation-Pilot Testing
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Institute Partners: System-Wide Review

The guideline draft, discussion and measurement specification documents undergo thorough review. Written comments are solicited from clinical, measurement, and management experts from within the member medical groups during an eight-week period of "Critical Review."

Each of the Institute's participating medical groups determines its own process for distributing the guideline and obtaining feedback. Clinicians are asked to suggest modifications based on their understanding of the clinical literature coupled with their clinical expertise. Representatives from all departments involved in implementation and measurement review the guideline to determine its operational impact. Measurement specifications for selected measures are developed by the Institute for Clinical Systems Improvement (ICSI) in collaboration with participating medical groups following general implementation of the guideline. The specifications suggest approaches to operationalizing the measure.

Guideline Work Group: Second Draft

Following the completion of the "Critical Review" period, the guideline work group meets 1 to 2 times to review the input received. The original guideline is revised as necessary and a written response is prepared to address each of the suggestions received from medical groups. Two members of the Cardiovascular Steering Committee carefully review the Critical Review input, the work group responses, and the revised draft of the guideline. They report to the entire committee their assessment of two questions: (1) Have the concerns of the medical groups been adequately addressed? (2) Are the medical groups willing and able to implement the guideline? The committee then either approves the guideline for pilot testing as submitted or negotiates changes with the work group representative present at the meeting.

Pilot Test

Medical groups introduce the guideline at pilot sites, providing training to the clinical staff and incorporating it into the organization's scheduling, computer and other practice systems. Evaluation and assessment occurs throughout the pilot test phase, which usually lasts for three months. Comments and suggestions are solicited in the same manner as used during the "Critical Review" phase.

The guideline work group meets to review the pilot sites' experiences and makes the necessary revisions to the guideline, the Cardiovascular Steering Committee reviews the revised guideline and approves it for implementation.

MAJOR RECOMMENDATIONS

The recommendations for stable coronary artery disease are presented in the form of two algorithms, accompanied by detailed annotations. The algorithm for Stable Coronary Artery Disease has 20 components and addresses the evaluation and overall management of the patient with the disease. The second algorithm, with 13 components, addresses Pharmacologic Therapy. Clinical highlights and selected annotations (numbered to correspond with the algorithms) follow.

Class of evidence (A-D, M, R, X) and conclusion grade (I-III, Not Assignable) definitions are repeated at the end of the "Major Recommendations" field.

Clinical Highlights

1. Prescribe aspirin in patients with stable coronary artery disease if there are no medical contraindications. (Annotation #12)
2. Evaluate and treat the modifiable risk factors, which include smoking, sedentary activity level, stress, hyperlipidemia, obesity, hypertension and diabetes. (Annotation #5)
3. Patients with chronic stable coronary artery disease should be considered for statin use regardless of their lipid levels. (Annotation #5)
4. Perform prognostic testing in patients whose risk determination remains unclear. This may precede or follow an initial course of pharmacologic therapy. (Annotations #7, 8, 9, 10)
5. Refer the patient for cardiovascular consultation when clinical assessment indicates the patient is at high risk for adverse events, the non-invasive imaging study or electrocardiogram indicate the patient is at high risk for an adverse event, or medical treatment is ineffective. (Annotations #11, 16)
6. For relief of angina, prescribe beta blockers as first line medication. If beta blockers are contraindicated, nitrates are the preferred alternative. Calcium channel blockers may be an alternative medication if the patient is unable to take beta blockers or nitrates. (Annotation #12)

Stable Coronary Artery Disease Algorithm Annotations

1. Patients with Stable Coronary Artery Disease (CAD)

   This guideline applies to patients with coronary artery disease either with or without angina. Examples include patients with prior myocardial infarctions, prior revascularization, angiographically proven coronary atherosclerosis, or reliable noninvasive evidence of myocardial ischemia.

   A patient presenting with angina must meet the following criteria:

   - Symptom complex has remained stable for at least 60 days
   - No significant change in frequency, duration, precipitating causes, or ease of relief of angina for at least 60 days
   - No evidence of recent myocardial damage

The patient may already have undergone some diagnostic workup as a result of a prior presentation of chest pressure, heaviness, and/or pain with or without radiation of the pain and/or shortness of breath. Initial care of such patients falls under the auspices of the National Guideline Clearinghouse (NGC) summary of the Institute for Clinical Systems Improvement (ICSI) Diagnosis of Chest Pain guideline.

Evidence supporting this recommendation is of class: R

2. Perform Appropriate History Taking, Physical Examination, Laboratory Studies and Patient Education

    Thorough history taking and physical examination including medication and compliance reviews are important to confirm diagnosis, to assist in risk stratification, and to develop a treatment plan. Important points to elicit on history taking are:

    - History of previous heart disease
    - Possible nonatheromatous causes of angina pectoris (e.g., aortic stenosis)
    - Comorbid conditions affecting progression of coronary artery disease
    - Symptoms of systemic atherosclerosis (i.e., claudication, transient ischemic attacks [TIAs] and bruits)
    - Severity and pattern of symptoms of angina pectoris

    The physical examination should include a thorough cardiovascular examination as well as evaluation for evidence of hyperlipidemia, hypertension, peripheral vascular disease, congestive heart failure, anemia, thyroid disease, and renal disease.

    Initial laboratory studies should include an electrocardiogram and a fasting lipid profile (total cholesterol, high-density lipoprotein [HDL] cholesterol, calculated low-density lipoprotein [LDL] cholesterol and triglycerides). Further tests, based on history and physical examination findings, may include chest x-ray, measurement of hemoglobin, and tests for diabetes, thyroid function, and renal function.

    An important aspect to treatment of stable coronary artery disease is education to help the patient understand the disease processes, prognosis, treatment options, and signs of worsening cardiac ischemia so that prompt medical assistance is sought when necessary and appropriate. Education may be accomplished in a number of ways among the various medical groups. It may be ongoing, occur in a formal class, and/or be done at the provider visit. Instruction on the proper use of aspirin and nitroglycerin sublingual, as needed, should also be reviewed at this time.

    Evidence supporting this recommendation is of class: R

5. Address Modifiable Risk Factors and Comorbid Affectors

Comorbid conditions that affect myocardial ischemia may include hypertension, anemia, thyroid disease, hypoxemia and others.

Modifiable risk factors for coronary heart disease need to be evaluated and may include smoking, inadequate physical activity, stress, hyperlipidemia, obesity, hypertension and diabetes mellitus. Intervention involving any risk factor pertinent to the patient is encouraged, and may include education, goal setting, and follow-up as necessary.

See Annotation Appendix A, "Comorbid Conditions" in the original guideline document for treatment recommendations in the presence of comorbid conditions.

Evidence supporting this conclusion is of class: A, B, R, X

6. **Assessment Yields High Risk of Adverse Event?**

   Some patients are considered to be at high risk for infarction or death on the basis of history, physical examination and initial laboratory findings. Patients presenting with accelerating symptoms of angina (New York Heart Association [NYHA] Class III or IV, see the original guideline document, Annotation Appendix C, "Grading Angina Pectoris"), symptoms of peripheral vascular disease, or symptoms of left ventricular dysfunction should be referred to a cardiologist unless precluded by other medical conditions.

7. **Need for Prognostic Testing?**

   Prognostic testing is appropriate for patients in whom risk determination remains unclear after the initial evaluations have been completed, or in whom cardiac catheterization is deemed inappropriate by the cardiologist. Prognostic testing may precede or follow an initial course of pharmacologic therapy.

   Evidence supporting this conclusion is of class: R

8. **Patient/Electrocardiogram Allows Exercise Electrocardiography?**

   Sensitivity of exercise electrocardiography (Masters 2-Step Exercise Test, Graded Exercise Test, Bicycle Test, Ergometry), may be reduced for patients unable to reach the level of exercise required for near maximal effort, such as:

   - Patients taking beta-blockers
   - Patients in whom fatigue, dyspnea, or claudication symptoms develop
   - Patients with vascular, orthopedic, or neurological conditions who cannot perform leg exercises

   Reduced specificity may be seen in patients with abnormalities on baseline electrocardiogram, such as those taking digitalis medications, and in patients with left ventricular hypertrophy or left bundle branch block. See the NGC summary of the ICSI Cardiac Stress Test Supplement for more information.

Evidence supporting this conclusion is of class: R

10. Perform Non-Invasive Imaging Study

A non-invasive imaging study such as myocardial perfusion scintigraphy or stress echocardiography should best meet the patient´s needs while providing the most clinical usefulness and cost-effectiveness within the provider´s institution. An imaging study should be selected through discussion with the cardiologist or imaging expert.

Evidence supporting this recommendation is of class: R

11. Results Yield High Risk of Adverse Event?

Exercise electrocardiography and prognostic imaging studies may yield results that indicate high, intermediate or low risk of adverse clinical events. High-risk patients should have a cardiology consultation unless they are not considered to be potential candidates for revascularization. Patients who are at intermediate or indeterminate risk may benefit from cardiology consultation or further noninvasive imaging if an exercise electrocardiogram has been performed, or both. Low-risk patients can generally be managed medically, with a good prognosis. Low-risk patients may benefit from angiography if the diagnosis remains unclear; however, angiography is unlikely to alter outcome in these patients.

Evidence supporting this recommendation is of class: R

12. Pharmacologic Therapy Algorithm Annotations
    a. Patient Education and Review Principles of Medication Therapy: Aspirin, Clopidogrel, Sublingual Nitrates

    The use of one aspirin tablet daily is strongly recommended unless there are medical contraindications. Patients for whom aspirin is contraindicated (examples are provided in the NGC Complete Guideline Summary field labeled "Contraindications"), or insufficient, should be treated with clopidogrel (Plavix®) 75 mg daily indefinitely, in view of greater safety, equivalent efficacy, and cost savings when compared with Ticlopidine as an antiplatelet treatment.

    Aspirin or clopidogrel should be prescribed to all patients with stablel coronary disease [Conclusion Grade I: See Discussion Appendix B, Conclusion Grading Worksheet -- Annotation #12a (ASA/Clopidogrel) in the origninal guideline document.] In patients with mild, stable coronary artery disease, drug therapy may be limited to short-acting sublingual nitrates on an as needed basis. Use of lower dose (i.e., 0.3 mg or one-half of a 0.4 mg tablet) may reduce the incidence of side effects such as headache or hypotension in susceptible patients.

    For more information regarding drug selection, see Annotation Appendix B, "Medication Tables," in the original guideline document.

Evidence supporting the aspirin recommendation is of classes: A, C, D, M, R

b. Nutritional Supplement Therapy

An association between homocysteine levels and cardiovascular disease has been demonstrated. The causality has not yet been proven, nor have the benefits of homocysteine-lowering therapy. However such therapy is unlikely to cause harm, and is inexpensive. Doses of folic acid between 1.0 mg and 1.2 mg per day are sufficient in most people with coronary artery disease (with the exception of those with renal failure). Vitamin B_6 should not be given in doses greater than 50 mg, because it can cause neurotoxicity. Vitamin B12, if used, should be given in doses of 300 mg to 1000 mg per day.

The American Heart Association recommends inclusion of omega-3 fatty acids in patients with stable coronary artery disease because of evidence from randomized controlled trials.

The recommended daily amount of omega-3 fatty acids in patients with stable coronary artery disease is 1 gram of eicosapentaenoic acid/docosahexaenoic acid (EPA/DHA) by capsule supplement, the equivalent amount in alpha-linolenic acid (LNA) from vegetable source, or by eating daily fatty fish. The amounts of omega-3 fatty acids in various foods are found in Appendix D in the original guideline document. Daily fish meals can be difficult for patients to maintain, and there are issues of potential environmental contaminants including mercury, polychlorinated biphenyls (PCBs), dioxin, and others. Because of this, capsule supplements may be preferred although there is no uniformity of EPA/DHA content or purity. Patients should consult their health providers or nutritionists regarding this issue.

Dietary and non-dietary intake of n-3 polyunsaturated fatty acids may reduce overall mortality, mortality due to myocardial infarction, and sudden death in patients with stable coronary artery disease. [Conclusion Grade II: See Discussion Appendix C, Conclusion Grading Worksheet - Annotation #12b (Omega III) in the original guideline document]

Evidence supporting this recommendation is of classes: A, B, C, M, R

c. Use of Angiotensin Converting Enzyme (ACE) Inhibitors for Risk Reduction

Among patients with stable angina, ACE inhibitors are most beneficial to patients with left ventricular dysfunction post myocardial infarction, persistent hypertension and diabetes. The broader population of patients with coronary artery disease may benefit from ACE inhibitors as well.

Evidence supporting this recommendation is of class: A

d. Does Patient Need Daily Maintenance Therapy?

The decision to initiate daily drug therapy for coronary artery disease is based upon the symptom complex of the patient in combination with findings from the history, physical examination, laboratory studies and prognostic testing.

Evidence supporting this recommendation is of classes: A, R

e. Beta-Blocking Agent Appropriate?

Beta-blockers should be used in all status post-myocardial infarction patients, based on studies showing mortality reduction. They are also the preferred first-line therapy for reducing symptoms of angina in patients with stable coronary artery disease. Drugs with intrinsic sympathomimetic activity should be avoided. Abrupt withdrawal of all beta-blockers should be avoided.

Evidence supporting this conclusion is of classes: A, R

f. Long-Acting Nitrates Appropriate?

If beta-blockers cannot be prescribed as first-line therapy, nitrates are the preferred alternative first-line therapy because of efficacy, low cost, and relatively few side effects. Tolerance to long-acting nitrates is an important clinical issue and can be avoided by appropriate daily nitrate-free intervals.

Adverse Interactions between Nitrates and Sildenafil

Patients with stable coronary artery disease should be advised that due to potentially life-threatening hypotension, sildenafil (Viagra) and phosphoesterase 5 inhibitors (Levitra) are absolutely contraindicated if they have used nitrates within the last 24 hours.

In any patient evaluated for acute coronary insufficiency, nitrates must also be avoided if there is a history of sildenafil or phosphodiesterase 5 inhibitor use in the previous 24 hours. All other interventions, including all non-nitrate antianginal medications may be used for these patients.

Evidence supporting this conclusion is of class: R

g. Calcium Channel Blockers Appropriate?

For patients who are unable to take beta-blockers or long-acting nitrates, the use of calcium channel blockers has been shown to be clinically effective. Dihydropyridines as monotherapy may exacerbate angina.

Evidence supporting this conclusion is of class: R

i. Prescribe Combination Therapy

Combination therapy may be necessary in selected patients, but they increase side-effects and cost. A combination of beta-blockers and long-acting nitrates is preferred because of cost, efficacy, and reduced potential for adverse side effects. The following factors should be considered when beta-blockers and calcium channel blockers are combined:

- This combination may not be better than either agent used alone in maximum tolerated doses
- If angina persists at the maximum optimal dose of beta-blocker, then addition of a calcium channel blocker is likely to reduce angina and improve exercise performance
- Addition of verapamil or diltiazem to a beta-blocker does not usually enhance therapy, and may precipitate symptomatic bradycardia, but addition of a beta-blocker to nifedipine can have enhanced effects
- With left ventricular dysfunction, sinus bradycardia, or conduction disturbances, treatment with calcium channel blockers and beta-blockers should be avoided or initiated with caution. In patients with conduction system disease, the preferred combination is nifedipine and a beta-blocker.
- The combination of dihydropyridines and long-acting oral nitrates is usually not optimal because both are potent vasodilators.
- If side effects prohibit increased doses but symptoms persist, selected patients may need low doses of multiple drug therapy.

Evidence supporting this conclusion is of classes: A, R

j. Combination Therapy Effective?

If after several attempts at adjusting the medications a therapeutic combination is not achieved for the patient, a cardiology consultation or referral may be appropriate.

14. Follow Regularly to Assess Risk Factors, Profile, Responses to Treatment

There is no consensus in the literature regarding frequency of follow-up; ongoing management needs and follow-up should be individualized.

Evidence supporting this conclusion is of class: D

15. Worsening in Angina Pattern?

A new occurrence of angina or a worsening in the chronic stable angina pattern is to be considered when any of the following occur: the symptom

complex becomes less stable; there is a change in frequency, duration, precipitating causes, or ease in relief of angina; or there is evidence of recent myocardial damage.

16. Change Suggests Need for Cardiology Referral?

When such change is no longer managed by alterations in the pharmacologic therapy prescribed, cardiology consultation or referral for possible invasive intervention may be appropriate.

See Annotation Appendix C, "Grading Angina Pectoris," in the original guideline document for information on grading angina pectoris.

Evidence supporting this conclusion is of class: R

Definitions:

Key conclusions (as determined by the work group) are supported by a conclusion grading worksheet that summarizes the important studies pertaining to the conclusion. Individual studies are classed according to the system presented below, and are designated as positive, negative, or neutral to reflect the study quality.

Conclusion Grades:

Grade I: The evidence consists of results from studies of strong design for answering the question addressed. The results are both clinically important and consistent with minor exceptions at most. The results are free of any significant doubts about generalizability, bias, and flaws in research design. Studies with negative results have sufficiently large samples to have adequate statistical power.

Grade II: The evidence consists of results from studies of strong design for answering the question addressed, but there is uncertainty attached to the conclusion because of inconsistencies among the results from the studies or because of minor doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from weaker designs for the question addressed, but the results have been confirmed in separate studies and are consistent with minor exceptions at most.

Grade III: The evidence consists of results from studies of strong design for answering the question addressed, but there is substantial uncertainty attached to the conclusion because of inconsistencies among the results of different studies or because of serious doubts about generalizability, bias, design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from a limited number of studies of weak design for answering the question addressed.

Grade Not Assignable: There is no evidence available that directly supports or refutes the conclusion.

Classes of Research Reports:

A. Primary Reports of New Data Collection:

Class A:

- Randomized, controlled trial

Class B:

- Cohort study

Class C:

- Non-randomized trial with concurrent or historical controls
- Case-control study
- Study of sensitivity and specificity of a diagnostic test
- Population-based descriptive study

Class D:

- Cross-sectional study
- Case series
- Case report

B. Reports that Synthesize or Reflect upon Collections of Primary Reports:

Class M:

- Meta-analysis
- Systematic review
- Decision analysis
- Cost-effectiveness analysis

Class R:

- Consensus statement
- Consensus report
- Narrative review

Class X:

- Medical opinion

CLINICAL ALGORITHM(S)

Detailed and annotated clinical algorithms are provided for:

- Stable Coronary Artery Disease
- Pharmacologic Therapy

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The guideline contains an annotated bibliography and discussion of the evidence supporting each recommendation. The type of supporting evidence is classified for selected recommendations (see "Major Recommendations").

In addition, key conclusions contained in the Work Group's algorithm are supported by a grading worksheet that summarizes the important studies pertaining to the conclusion. The type and quality of the evidence supporting these key recommendations is graded for each study.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- An effective management plan for stable coronary artery disease may result in pain control, reduced morbidity and mortality associated with coronary artery disease, and safe and cost-effective use of pharmacologic agents.
- Application of this guideline may optimize medical therapy through improved selection and education of patients with stable coronary artery disease on the use of aspirin and anti-anginal drugs, improve patient understanding of management of stable coronary artery disease, and increase the percentage of patients with stable coronary artery disease who receive an intervention for modifiable risk factors.

POTENTIAL HARMS

- Thrombotic thrombocytopenic purpura (TTP) may occur with clopidogrel, but it appears to be 1/100th as frequent as thrombotic thrombocytopenic purpura for ticlopidine.
- Addition of verapamil or diltiazem to a beta-blocker may precipitate symptomatic bradycardia

CONTRAINDICATIONS

CONTRAINDICATIONS

Patients with stable coronary artery disease should be advised that due to potentially life-threatening hypotension, sildenafil (Viagra) and phosphoesterase 5 inhibitors (Levitra) are absolutely contraindicated if they have used nitrates within the last 24 hours.

Examples of precautions/contraindications to aspirin are:

- Patients allergic to aspirin
- Patients with gastrointestinal disorders
    - Recent gastrointestinal bleeding and acute treatment for peptic ulcer disease are contraindications

- Patients with recent intracranial bleeding
  - Intracranial bleeding within the past six weeks is a contraindication.
- Patients with bleeding disorders or those receiving other anticoagulants
- Patients with uncontrolled hypertension
  - Systolic blood pressure >180 mmHg; diastolic blood pressure >110 mmHg
- Patients regularly taking NSAIDs
  - Combined use of aspirin and NSAIDs may increase risk of bleeding. Enteric coated aspirin with careful monitoring for clinical signs of gastropathy may be an acceptable strategy for patients regularly taking NSAIDs.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- These clinical guidelines are designed to assist clinicians by providing an analytical framework for the evaluation and treatment of patients and are not intended either to replace a clinician's judgment or to establish a protocol for all patients with a particular condition. A guideline will rarely establish the only approach to a problem.
- This clinical guideline should not be construed as medical advice or medical opinion related to any specific facts or circumstances. Patients are urged to consult a health care professional regarding their own situation and any specific medical questions they may have.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Once a guideline is approved for general implementation, a medical group can choose to concentrate on the implementation of that guideline. When four or more groups choose the same guideline to implement and they wish to collaborate with others, they may form an action group.

In the action group, each medical group sets specific goals they plan to achieve in improving patient care based on the particular guideline(s). Each medical group shares its experiences and supporting measurement results within the action group. This sharing facilitates a collaborative learning environment. Action group learnings are also documented and shared with interested medical groups within the collaborative.

Currently, action groups may focus on one guideline or a set of guidelines such as hypertension, lipid treatment and tobacco cessation.

Detailed measurement strategies are presented in the original guideline document to help close the gap between clinical practice and the guideline recommendations. Summaries of the measures are provided in the National Quality Measures Clearinghouse (NQMC).

RELATED NQMC MEASURES

- Stable coronary artery disease (CAD): percentage of patients with stable CAD who have aspirin use documented in the medical record.
- Stable coronary artery disease (CAD): percentage of patients with stable CAD who have had a lipid profile determination at target (less than 100) and measured within the last year.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Institute for Clinical Systems Improvement (ICSI). Stable coronary artery disease. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2003 Nov. 42 p. [75 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1994 Jul (revised 2003 Nov)

GUIDELINE DEVELOPER(S)

Institute for Clinical Systems Improvement - Private Nonprofit Organization

GUIDELINE DEVELOPER COMMENT

Organizations participating in the Institute for Clinical Systems Improvement (ICSI): Affiliated Community Medical Centers, Allina Medical Clinic, Altru Health System, Aspen Medical Group, Avera Health, CentraCare, Columbia Park Medical Group, Community-University Health Care Center, Dakota Clinic, ENT SpecialtyCare, Fairview Health Services, Family HealthServices Minnesota, Family Practice Medical Center, Gateway Family Health Clinic, Gillette Children's Specialty Healthcare, Grand Itasca Clinic and Hospital, Hamm Clinic, HealthEast Care

System, HealthPartners Central Minnesota Clinics, HealthPartners Medical Group and Clinics, Hennepin Faculty Associates, Hutchinson Area Health Care, Hutchinson Medical Center, Lakeview Clinic, Mayo Clinic, Mercy Hospital and Health Care Center, MeritCare, Minnesota Gastroenterology, Montevideo Clinic, North Clinic, North Memorial Health Care, North Suburban Family Physicians, NorthPoint Health &: Wellness Center, Northwest Family Physicians, Olmsted Medical Center, Park Nicollet Health Services, Quello Clinic, Ridgeview Medical Center, River Falls Medical Clinic, St. Mary's/Duluth Clinic Health System, St. Paul Heart Clinic, Sioux Valley Hospitals and Health System, Southside Community Health Services, Stillwater Medical Group, SuperiorHealth Medical Group, University of Minnesota Physicians, Winona Clinic, Winona Health

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SOURCE(S) OF FUNDING

GUIDELINE COMMITTEE

Cardiovascular Steering Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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GUIDELINE STATUS

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GUIDELINE AVAILABILITY

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Print copies: Available from ICSI, 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425; telephone, (952) 814-7060; fax, (952) 858-9675; Web site: www.icsi.org; e-mail: icsi.info@icsi.org.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

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